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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,359

06/23/2006

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EXAMINER

JOHNSON, MATTHEW A

ART UNIT

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3682

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,359	Applicant(s) INOUE ET AL.	
	Examiner MATTHEW JOHNSON	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/24/2008</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 and 5, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Newport et al. (USP-5,809,833).

Re clm 1: Newport discloses a linear actuator (10) comprising:

- A shaft (30) having a male thread portion (Fig. 3)
- A worm gear speed reducer (26)
- A female thread member (36) which is threadedly engaged with the male thread portion (C3 L16-18 & C3 L24-26)
- A moving cylinder (32) which is fixed to the female thread member (C3 L45-47)
- A position detection apparatus (74, 124; Note: C6 L53-62)

Regarding the limitation, "wherein the position detection apparatus can adjust detection of a position of the moving cylinder in the housing", the examiner notes while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. The limitation does not further structurally limit the claim. The

reference discloses all claimed structural limitations and therefore anticipates the claim (See MPEP 2114).

Re clm 2: Newport discloses the position detection apparatus comprises a potentiometer (C6 L10-14) and the position detection apparatus is movably provided on the housing (bracket 74 is capable of movement during assembly, C6 L57-62).

Re clm 5: Newport discloses a linear actuator (10) comprising:

- A shaft (30) having a male thread portion (Fig. 3)
- A worm gear speed reducer (26)
- A female thread member (36) which is threadedly engaged with the male thread portion (C3 L16-18 & C3 L24-26)
- A moving cylinder (32) which is fixed to the female thread member (C3 L45-47)
- A position detection apparatus (74, 124; Note: C6 L53-62)

Regarding the limitation, "wherein the mounting of the position detection apparatus allows the position of the moving cylinder detected by the position detection apparatus to be adjusted in the housing", the examiner notes while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. The limitation does not further structurally limit the claim. The reference discloses all claimed structural limitations and therefore anticipates the claim (See MPEP 2114).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 4, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Newport et al. (USP-5,809,833) in view of Abraham (USP-4,712,441).

Re clms 3 and 4: Newport discloses all of the claim limitations as described above.

While Newport does indeed disclose a driven gear (130) mounted on a sensor shaft (Fig. 7) of the potentiometer (124), Newport does not disclose the driven gear is meshed with a pinion which rotates in unison with the shaft.

Abraham teaches potentiometer (190) having a driven gear (200) meshed with a pinion (198, 196, 194, 188) which rotates in unison with a shaft (54) for the purpose of providing rotational power to the potentiometer through a speed reduction gearing (C7 L50-60).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the device of Newport to include a pinion meshed with the driven gear of the potentiometer, as taught by Abraham, for the

purpose of providing rotational power to the potentiometer through a speed reduction gearing (C7 L50-60).

Regarding the limitation “the potentiometer can move/slide in the axial direction of the moving cylinder”, the examiner notes while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. The limitation does not further structurally define the claim. The reference discloses all claimed structural limitations and therefore anticipates the claim (See MPEP 2114).

Response to Arguments

5. Applicant's arguments filed 1/30/2008 have been fully considered but they are not persuasive.

Regarding claim 1, Applicant argues that Newport does not disclose that the linear actuator comprises a position detection apparatus that can adjust detection of a position of the moving cylinder in the housing. As noted above, the limitation does not recite any additional structure that overcomes the prior art. Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (see MPEP 2114). Newport discloses all the claimed structure and therefore anticipates the claim. Additionally, the position detection apparatus (74, 124) of Newport includes limit switches (120, 122) which can be adjusted to stop the moving cylinder (32) at any point of travel of the moving cylinder (C6 L24-25). Therefore the position detection apparatus is capable of performing the function.

Regarding claim 2, Applicant argues that Newport does not disclose the position detection apparatus is movably provided on the housing. As broadly recited, the position detection apparatus (74, 124) is movably provided on the housing. The mounting bracket (74) functions to locate the gear center distances of the worm gear (70). During assembly, the bracket is aligned such that the gears mesh properly and maintain the necessary gear backlash to each other and between the gears and the lead screw (30).

Conclusion

Zouzoulas (USP-4,307,799) discloses a linear actuator (2) having a position detection apparatus (41) that can adjust detection of a position of a moving cylinder in the housing (adjustable pointers 70,72; C6 L9-61). Nakamura et al. (USP-5,890,585) discloses a linear actuator (1) having a position detection apparatus (Fig. 2) that can adjust detection of a position of a moving cylinder (See Abstract & C2 L11-39).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW JOHNSON whose telephone number is (571)272-7944. The examiner can normally be reached on Monday - Friday 8:30a.m. - 5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J./
Examiner, Art Unit 3682

/Richard WL Ridley/
Supervisory Patent Examiner, Art Unit 3682